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Uwe Falk

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06/25/2008

AZ ELECTRONIC MATERIALS USA CORP.
ATTENTION: INDUSTRIAL PROPERTY DEPT.
70 MEISTER AVENUE
SOMERVILLE, NJ 08876

EXAMINER

CHAWLA, JYOTI

ART UNIT

PAPER NUMBER

1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/518,315	Applicant(s) FALK ET AL.	
	Examiner JYOTI CHAWLA	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claims 1-26 are pending and examined in the application.

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on June 28, 2002. It is noted, however, that applicant has not filed a certified copy of the 10229047.4 application as required by 35 U.S.C. 119(b).

Information Disclosure Statement

The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

A) Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm et al. (US 4,027,046), hereinafter Bohm, in view of Tanaka et al. (US 5,622,743), hereinafter Tanaka.

Regarding claim 1, Bohm teaches a method for fining, clarifying and stabilizing liquid foods comprising adding to the liquid foods colloidal, anionic (or negatively charged) silica sols having particle diameter of 2-200 millimicron (nm) (Column 1, lines 37-47 and claim 4), which includes applicant's range of 4 to 150 nm. Regarding surface area Bohm teaches of silica sol particles of 50-600 m²/g (Column 4, lines 22-28), which falls in

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applicant's recited range of 20 to 700 m²/g. Also see (Abstract, Column 2, lines 40-45, Column 4, lines 22-28). Regarding the pH of silica sol, Bohm teaches that both acidic and alkaline sols were available at the time, however, Bohm does not specify the pH of silica sol used to fine or clarify or stabilize liquid foods. Tanaka teaches of treatment of beer (liquid food) to stabilize beer with aqueous silica suspension having a pH range of 3.5 to 5 (Abstract, column 4, lines 15-25), which includes pH values in applicant's recited range of pH 1-4. Tanaka also teaches that aqueous silica suspension that is mildly acidic is preferred because it falls in a pH region like that of beer and is more effective in removing turbidity precursors without deteriorating the froth-holding property of beer (Column 2, lines 45-55). Thus, aqueous suspensions of silica in acidic range were known to be used to clarify or stabilize beer or liquid foods at the time of the invention (Tanaka). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bohm and use acidic aqueous silica suspension with pH in the range as taught by Tanaka to clarify food liquids, like beer, in order to effectively remove turbidity precursors without deteriorating the froth-holding property of beer, as taught by Tanaka.

Regarding claim 2, Bohm teaches of aqueous suspension of colloidal anionic silica sols having a silica sol content of 15% or more (Column 4, lines 29-37), which falls in the recited concentration range of more than 5% by weight.

Regarding claims 3 and 9, Bohm teaches of aqueous suspension of colloidal anionic silica sols wherein the particle diameter of the silica sols used is between 2-200 millimicrons, or 2-200 nm (Column 1, lines 37-47 and claim 4), which includes applicant's recited range of 6 and 50 nm (claim 3) and 8-35 nm (claim 9).

Claim 4, recites the range of pH for the silica sols used between 2 and 4. Bohm does not specify the pH of the silica sol, however, Tanaka teaches of aqueous silica suspension having a pH range of 3.5 to 5 (Abstract, column 4, lines 15-25), which includes pH values in applicant's recited range of pH 2-4. Thus, aqueous suspensions

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of silica in acidic range were known to be used to clarify or stabilize beer or liquid foods at the time of the invention (Tanaka). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bohm and use acidic aqueous silica suspension with pH in the range as taught by Tanaka to clarify food liquids, like beer, in order to effectively remove turbidity precursors without deteriorating the froth-holding property of beer, as taught by Tanaka (Column 2, lines 45-55).

Regarding claim 5, Bohm teaches of surface area of the silica sols used is between 50 to 600 m²/g (Column 4, lines 22-28), which includes particles with areas in applicant's recited range of 60 to 500 m²/g.

Regarding claim 6, Bohm teaches of a method of clarifying or fining the liquid foods where the food is fruit juice, beer or wine (Column 1, lines 5-10), as instantly claimed.

Regarding claim 7, Bohm teaches addition of polyvinylpyrrolidone to the silica sol (Column 3, line 66), as instantly claimed.

Regarding claim 8, Bohm teaches that the amount of silica sols added is 5 to 500 g/hectoliter (Column 3, lines 5-10), as instantly claimed.

Claim 10, includes all of the limitations as recited in claim 1, therefore claim 10 is rejected over Bohm in view of Tanaka, for the same reasons as discussed regarding claim 1 above. In addition to the limitations of claim 1, claim 10 includes a step of removing the silica sol after clarifying the liquid foods. Bohm (Column 4, lines 55-60), teaches that the silica sol and haze producing agents in liquids flocculate out and the liquid food is filtered, thus Bohm teaches of removing silica sol after the food is clarified, as recited in the claims.

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Regarding claim 11, Bohm teaches of aqueous suspension of colloidal anionic silica sols having a silica sol content of 15% or more (Column 4, lines 29-37), which falls in the recited concentration range of more than 5% by weight.

Regarding claims 12 and 13, Bohm teaches of aqueous suspension of colloidal anionic silica sols wherein the particle diameter of the silica sols used is between 2-200 millimicrons, or 2-200 nm (Column 1, lines 37-47 and claim 4), which includes applicant's recited range of 6 and 50 nm (claim 12) and 8-35 nm (claim 13).

Regarding claim 14, Bohm teaches of surface area of the silica sols used is between 50 to 600 m²/g (Column 4, lines 22-28), which includes particles with areas in applicant's recited range of 60 to 500 m²/g.

Regarding claim 15, Bohm teaches of a method of clarifying or fining the liquid foods where the food is fruit juice, beer or wine (Column 1, lines 5-10), as instantly claimed.

Regarding claim 16, Bohm teaches addition of polyvinylpyrrolidone to the silica sol (Column 3, line 66), as instantly claimed.

Regarding claim 17, Bohm teaches that the amount of silica sols added is 5 to 500 g/hectoliter (Column 3, lines 5-10), as instantly claimed.

Claim 18, recites the range of pH for the silica sols used between 2 and 4, as recited in claim 4 and is thus rejected for the same reasons as discussed regarding claim 4 in the office action above.

Therefore claims 1-18 are obvious over Bohm in view of Tanaka.

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B) Claims 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohm (US 4,027,046), in view of the combination of Tanaka (US 5,622,743) and Brewing Science and Practice (pages 556-559).

Regarding claim 19, Bohm teaches a method for fining, clarifying and stabilizing liquid foods comprising adding to the liquid foods, colloidal, anionic (or negatively charged) silica sols having particle diameter of 2-200 millimicron (nm) (Column 1, lines 37-47 and claim 4), which includes applicant's range of 4 to 150 nm. Regarding surface area Bohm teaches of silica sol particles of 50-600 m²/g (Column 4, lines 22-28), which falls in applicant's recited range of 20 to 700 m²/g. Also see (Abstract, Column 2, lines 40-45, Column 4, lines 22-28). Bohm teaches of clarifying fruit juice or grape or fruit wine or must in fermented, partially fermented or unfermented form (Column 1, lines 5-10), however, the reference is silent about fermented and unfiltered beer. Tanaka teaches of adding silica suspension or sol to beer as stabilizing agent and to clarifying beer.

However, Tanaka does not specify adding silica suspension to fermented and unfiltered beer as recited. However, adding a stabilizing agent to the fermented beer that has not yet been filtered, in order to flocculate and remove the clouding agents would be obvious to one of ordinary skill in the art. Also Brewing science and Practice page 559, provides evidence that silica sol was known to be added to beer in the maturation tank, i.e., after fermentation and before filtration, which is as recited by the applicant. Thus silica sols were used to stabilize and clarify fermented and unfiltered beer (Tanaka and Brewing Science and Practice) at the time the invention was made. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to Modify Bohm in view of Tanaka and Brewing Science and Practice, and use the silica sol to clarify unfiltered and fermented beer, in order to remove the proteins that produce cloudiness in the beer upon standing or cooling.

Regarding the pH of silica sol, Bohm teaches that both acidic and alkaline sols were available at the time, however, Bohm does not specify the pH of silica sol used to fine or clarify or stabilize liquid foods. Tanaka teaches of treatment of beer (liquid food) to stabilize beer with aqueous silica suspension having a pH range of 3.5 to 5 (Abstract,

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column 4, lines 15-25), which includes pH values in applicant's recited range of pH 1-4. Tanaka also teaches that aqueous silica suspension that is mildly acidic is preferred because it falls in a pH region like that of beer and is more effective in removing turbidity precursors without deteriorating the froth-holding property of beer (Column 2, lines 45-55). Thus, aqueous suspensions of silica in acidic range were known to be used to clarify or stabilize beer or liquid foods at the time of the invention (Tanaka). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Bohm and use acidic aqueous silica suspension with pH in the range as taught by Tanaka to clarify food liquids, like beer, in order to effectively remove turbidity precursors without deteriorating the froth-holding property of beer, as taught by Tanaka.

Regarding the sodium content of the beer, it is noted that if the claimed and prior art products are identical or substantially identical in composition are used in substantially the same amounts, it would be reasonable for one of ordinary skill in the art to expect that the prior art product would produce results that are comparable to the one produced by the claimed product. Bohm in view of Tanaka teaches of aqueous suspension of colloidal, anionic silica sols having pH, particle size, and surface area in the range recited by the applicant, i.e., the silica sol disclosed by modified Bohm is comparable to the silica sol of the invention. Further, modified Bohm teaches of adding the silica sol to beer in the amount recited by the applicant, as discussed above. Therefore, in the instant case one of ordinary skill in the art at the time of the invention would have a reasonable expectation of success of clarifying beer with sodium content identical to the unfiltered beer, as claimed, absent any clear and convincing evidence and/or arguments to the contrary.

Therefore, Bohm in view of combination of Tanaka and Brewing Science and Practice teach a process of clarifying fermented and unfiltered beer as recited in claim 19.

Regarding claim 20, Bohm teaches of aqueous suspension of colloidal anionic silica sols having a silica sol content of 15% or more (Column 4, lines 29-37), which falls in the recited concentration range of more than 5% by weight.

Regarding claims 21 and 22, Bohm teaches of aqueous suspension of colloidal anionic silica sols wherein the particle diameter of the silica sols used is between 2-200 millimicrons, or 2-200 nm (Column 1, lines 37-47 and claim 4), which includes applicant's recited range of 6 and 50 nm (claim 21) and 8-35 nm (claim 22).

Regarding claim 23, Bohm teaches of surface area of the silica sols used is between 50 to 600 m²/g (Column 4, lines 22-28), which includes particles with areas in applicant's recited range of 60 to 500 m²/g.

Regarding claim 24, Bohm teaches addition of polyvinylpyrrolidone to the silica sol (Column 3, line 66), as instantly claimed.

Regarding claim 25, Bohm teaches that the amount of silica sols added is 5 to 500 g/hectoliter (Column 3, lines 5-10), as instantly claimed.

Claim 26, recites the range of pH for the silica sols used between 2 and 4, as recited in claim 4 and is thus rejected for the same reasons as discussed regarding claim 4 in the office action above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JYOTI CHAWLA whose telephone number is (571)272-8212. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794

Jyoti Chawla
Examiner
Art Unit 1794